

Notice No.6

Rules and Regulations for the Classification of Naval Ships, January 2022

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: December 2022

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Volume 1, Part 1, Chapter 3, Sections 2 & 10	1 January 2023	N/A
Volume 1, Part 3, Chapter 1, Section 5	1 January 2023	N/A
Volume 1, Part 3, Chapter 2, Sections 1 & 4	1 January 2023	N/A
Volume 1, Part 3, Chapter 5, Sections 5 & 9	1 January 2023	N/A
Volume 1, Part 4, Chapter 1, Section 5	1 January 2023	N/A
Volume 1, Part 6, Chapter 6, Section 2	1 January 2023	N/A



Volume 1,

Part 1

Chapter 3 Periodical Survey Regulations

■ Section 2

Annual Surveys - Hull, machinery and optional requirements

2.3 Machinery

Existing paragraph 2.3.14 has been deleted and replaced with the below:

2.3.14 Where Lithium-Ion battery system installations with a total system capacity exceeding 20 kWh are used as a power source for Mobility or Ship Type systems, testing of the following is to be conducted annually so far as is practicable:

- manual and automatic safety functions; and
- monitoring and control functions.

2.3.15 The safety aspects of spaces or compartments containing Lithium-Ion batteries used as a power source for Mobility or Ship Type systems are to be examined as applicable to the installation. This should include examinations of the following, as relevant:

- (a) structural fire protection;
- (b) fixed fire detection;
- (c) fixed fire-fighting system(s);
- (d) ventilation and associated dampers;
- (e) off-gas detection, exhaust and/or extraction arrangement;
- (f) integrity of battery crates, trays, boxes, shelves and other structural parts;
- (g) battery cooling arrangement;
- (h) electrical power cabling, switchgear and converters; and
- (i) EEBD (emergency escape breathing devices) and means of escape.

Existing paragraphs 2.3.15 to 2.3.21 have been renumbered 2.3.16 to 2.3.22.

■ Section 10

Electrical equipment

10.2 Complete Surveys

10.2.15 Where batteries with a connected charging device exceeding 2kW provide the source of power for any Mobility or Ship Type systems their installation, including charging and ventilation arrangements, is to be examined.

10.2.16 Sufficient battery capacity shall be verified for Lithium-Ion battery system installations used as the primary power source for emergency systems.

10.2.17 Where Lithium-Ion batteries with total system capacity exceeding 20 kWh are used as the primary power source for Mobility or Ship Type systems a test of all required monitoring and safety functions shall be carried out.

10.2.18 A test of the safety functions in spaces or compartments containing Lithium-Ion batteries with total system capacity exceeding 20 kWh shall be carried out, i.e. fire detection and extinguishing, gas detection, ventilation etc. as applicable to the installation.

10.2.19 The safety aspects of spaces or compartments containing Lithium-Ion batteries used as a power source are to be examined as applicable to the installation. This should include examinations of the following, as relevant:

- (a) structural fire protection;
- (b) fixed fire detection;
- (c) fixed fire-fighting system(s);
- (d) ventilation and associated dampers;
- (e) off-gas detection, exhaust and/or extraction arrangement;
- (f) integrity of battery crates, trays, boxes, shelves and other structural parts;
- (g) battery cooling arrangement;
- (h) electrical power cabling, switchgear and converters; and
- (i) EEBDs (emergency escape breathing devices) and means of escape.

Volume 1, Part 3,

Chapter 1

General

■ Section 5

Definitions

5.4 Decks

5.4.4 The damage control deck is the lowest deck on which continuous fore and aft access is provided to aid communications and recovery following damage. It is normally located above the lowest vertical limit of watertight integrity at the centreline, the exact location being determined by the relevant subdivision sub-division and watertight integrity standard.

Volume 1, Part 3,

Chapter 2

Ship Design

■ Section 1

General

1.2 Definitions

1.2.3 The vertical limit of watertight integrity is the vertical extent to which water might rise in the damaged condition and below which structures and systems forming sub-division boundaries must be watertight, see [Vol 1, Pt 3, Ch 2, 1.3 Watertight and weathertight integrity 1.3.6](#).

■ Section 4

Bulkhead arrangements

4.3 Collision bulkheads

4.3.1 The collision bulkhead is to be positioned as detailed in [Table 2.4.2 Collision bulkhead position distance of collision bulkhead aft of fore end of \$L_R\$, in metres](#). However, consideration will be given to proposals for the collision bulkhead, including any extensions, to be positioned slightly further aft on an arrangement (b) ship, but not more than $0,08 L_R$ from the fore end of L_{R1} , provided that the application is accompanied by calculations showing that flooding of the spaces forward of the collision bulkhead, including below any steps, will not result in any part of the bulkhead uppermost continuous deck becoming submerged, or any unacceptable loss of stability. The length L_R is as defined in [Table 2.4.1 Minimum number of bulkheads Vol 1, Pt 3, Ch 1, 5.2 Principal particulars 5.2.2](#).

4.3.3 No accesses or ventilation ducts are to be fitted in the collision bulkheads below the vertical limit of watertight integrity. In designs where it would be impracticable to arrange access to the fore peak spaces other than through the collision bulkhead, access may be permitted if specified. Where accesses are provided, the openings are to be as small as practicable and positioned as far above the design waterline draught as possible, in any event, no lower than the damage control deck. Access is to be by manholes with bolts spaced at a watertight pitch – a watertight manhole with a bolted cover (e.g. ISO 5894 *Ships and marine technology – Manholes with bolted covers*).

4.3.4 ~~Pipe runs or cable runs~~ Penetrations for piping, cabling, ventilation or other services are only to be fitted in the collision bulkhead below the vertical limit of watertight integrity if specified in permitted by the subdivision sub-division and stability standard(s). Where permitted, pipe penetrations are to be in accordance with [Vol 2, Pt 7, Ch 2, 3 Drainage of compartments, other than machinery spaces](#).

4.3.5 The number of openings in the extension of the collision bulkhead above the vertical limit of watertight integrity shall be restricted to the minimum compatible with the design and normal operation of the ship. All such openings shall be capable of being closed weathertight.

4.4 Aft peak bulkhead

Table 2.4.2 Collision bulkhead position distance of collision bulkhead aft of fore end of L_R , in metres

Arrangement	Length L_R , in metres	Minimum	Maximum
(b)	≤ 200	$0,05L_R - f_1$	$0,08L_R - f_1$
	> 200	$40m - f_2$	$0,08L_R - f_2$

4.5 Height of bulkheads

4.5.1 The collision bulkhead is normally to extend to the uppermost continuous deck or, in the case of a ship with combined bridge and fore-castle or a long forward superstructure which includes a or fore-castle, to the first superstructure deck or weather deck. However, if a ship is fitted with more than one complete superstructure deck, the collision bulkhead may be terminated at the first deck above the uppermost continuous deck vertical limit of watertight integrity. Where the collision bulkhead extends above the vertical limit of watertight integrity, the extension need only be to weathertight standards; however, where [Vol 1, Pt 5, Ch 3, 5.9 Collision bulkheads 5.9.5](#) applies, the full height shall also be designed to the pressures for the shell envelope.

4.5.2 The aft peak bulkhead may terminate at the first deck above the lead-waterline design draught, provided that this deck is made watertight to the stern or to a watertight transom floor.

4.5.4 In ships fitted with enclosed mooring decks above the uppermost continuous deck, and where the arrangements prevent the collision bulkhead from extending to the first superstructure deck, the enclosed mooring deck and fittings are to be weathertight up to and including the next bulkhead aft, unless they are otherwise required to be watertight by the sub-division and stability standards.

4.6 Watertight recesses, flats, openings and loading ramps

4.6.3 In collision bulkheads, any recesses or steps in the bulkhead are to fall within the limits of bulkhead positions given in [Vol 1, Pt 3, Ch 2, 4.3 Collision bulkheads 4.3.1](#). If a step occurs above the virtual vertical limit of watertight integrity, the deck need also only be to weathertight standards in way of the step, unless the step it forms part of a damage control deck, in which case it shall be watertight. Additionally, if the step forms the crown of a tank, in which case the requirements for deep tank structures are to be complied with.

Volume 1, Part 3, Chapter 5

Anchoring, Mooring, Towing, Berthing, Launching, Recovery and Docking

■ Section 5 Anchor cable

5.2 Chain cable and chain locker

Existing paragraphs 5.2.11, 5.2.12 and 5.2.13 have been deleted.

5.6 Cable locker

5.6.2 The chain locker is to be of a adequate capacity and depth adequate to provide an easy direct lead for of the cables into through the chain pipes, when the cable is fully stowed and to facilitate self-stowing and deployment of the cables. Chain or spurling pipes are to be of suitable size and provided with chafing lips. The port and starboard cables are to be separated by a division in the locker.

Existing paragraph 5.6.3 has been deleted.

5.6.3 The chain locker boundaries are to be watertight up to the mooring deck. However, bulkheads between separate chain lockers, or which form a common boundary of chain lockers, need not be watertight.

5.6.4 Where the means of access to the chain locker is located below the mooring deck, the access cover and its securing arrangement in general are to be in accordance with recognised standards for watertight manholes with bolted covers (e.g. ISO 5894 *Ships and marine technology – Manholes with bolted covers*). Butterfly nuts and/or hinged bolts are prohibited as the securing mechanism for the access cover.

5.6.5 Chain or spurling pipes through which anchor cables are led shall be provided with permanently attached closing appliances to minimise water ingress. In enclosed mooring decks these are also to be fitted to hawsepipes and be of sufficient strength to resist water jets from bow slamming.

5.6.6 The chain locker is to be provided with adequate drainage facilities, see [Vol 2, Pt 7, Ch 2, 3.4 Space above fore, after peaks and machinery spaces 3.4.1](#).

■ Section 9 Structural details

Existing sub-section 9.3 to be replaced with a new sub-Section 9.3 below:

9.3 Chain lockers

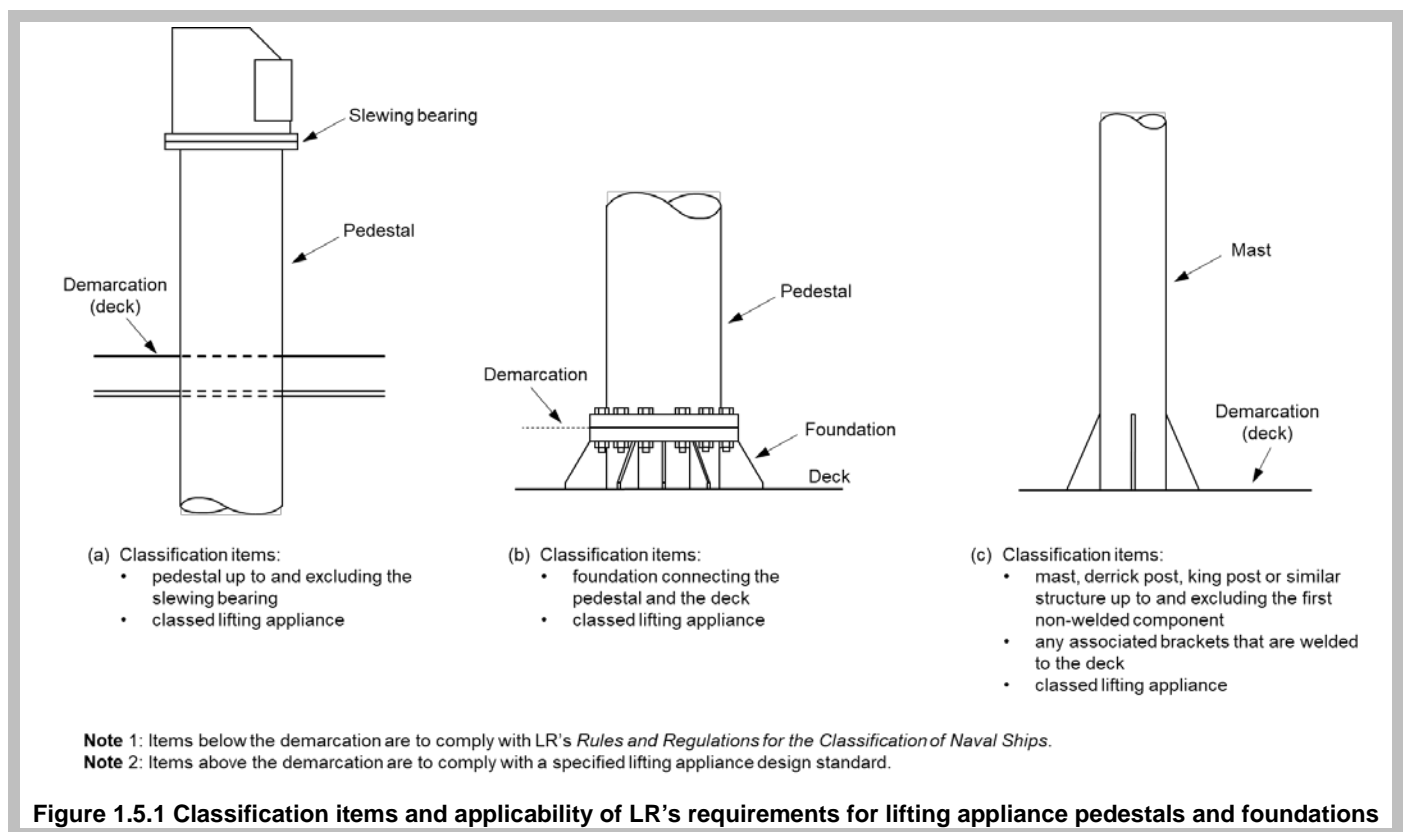
9.3.1 Chain lockers and supporting structures shall be capable of withstanding loads associated with ship motions in the forward region acting on the anchor cable as a lumped mass, see [Vol 1, Pt 5, Ch 3, 5.4 Loads for decks designed for cargo or heavy equipment loads, \$P_{cd}\$ and \$W_{cd}\$](#) .

Volume 1, Part 4, Chapter 1 Military Design

■ Section 5 Military design requirements

5.5 Crane-Lifting appliances and support arrangements

5.5.1 Lifting appliance pedestals and foundations that are welded to the supporting hull structures are classification items, and the scantlings and arrangements are to comply with LR's requirements whether or not LR is also requested to certify or class the lifting appliance and issue the Register of Ship's Lifting Appliances and Cargo Handling Gear, see [Figure 1.5.1 Classification items and applicability of LR's requirements for lifting appliance pedestals and foundations](#).



5.5.4.5.4 ~~Crane pedestals~~ Lifting appliance pedestals and foundations are to be efficiently supported and, in general, are to be carried through the deck and satisfactorily ~~scarfed~~ integrated into the surrounding structure. Alternatively, ~~crane~~ lifting appliance pedestals and foundations may ~~comprise a foundation, in which case the foundation and its~~ be carried into a supporting structure ~~are~~

to be of substantial constructionadequate strength, see Vol 1, Pt 4, Ch 1, 5.5 Lifting appliances and support arrangements 5.5.6. Proposals for other support arrangements will be specially considered.

~~5.5.25.5.2~~ The scantlings of lifting appliance pedestals and foundations (such as masts, derrick posts and crane pedestals) ~~masts and derrick posts, intended to support derrick booms, conveyor arms and similar loads, and of crane pedestals~~ are to be designed in accordance with a specified standard, with respect to the worst possible combinations of loads resulting from the installed lifting appliance self-weight, live load and accelerations, together with those resulting from the wind and the ship's heel and trim, when in use and when stowed. When submitting plans for the proposed pedestal and foundation, the design calculations are to be included.

~~5.5.35.5.5~~ Deck plating and underdeck structure are to be reinforced under ~~masts, derrick posts or crane pedestals~~ lifting appliance pedestals and foundations, and where the deck is penetrated the deck plating is to be suitably increased.

~~5.5.45.5.6~~ The pedestal or proposed arrangement is to be designed with respect to the worst possible combinations of loads resulting from the crane self weight, live load, wind and crane accelerations together with those resulting from the ship's heel and trim. The designers calculations are to be submitted. The forces and moments resulting from an installed lifting appliance are to be taken into consideration on the basis of the lifting appliance design standard when assessing the support arrangements, including the deck plating and underdeck stiffening in way of the lifting appliance pedestal and foundation. The global hull girder stresses are to be taken into account where applicable, with due consideration given to the material grade, see also Vol 1, Pt 6, Ch 4 Hull girder strength.

~~5.5.55.5.3~~ Stowage arrangements are to be taken into account when calculating the loads applied to the pedestal.

~~5.5.65.5.7~~ Insert plates are to be incorporated in the deck plating in way of crane lifting appliance foundations. The thickness of the insert plates is to be as required by the designer's calculations but is in no case is to be taken as less than 1,5 times the thickness of the adjacent attached plating.

Paragraphs 5.5.7 to 5.5.9 have been renumbered 5.5.8 to 5.5.10.

Volume 1, Part 6

Chapter 6

Materials and Welding Requirements

■ Section 2 Materials

2.2 Grade of steel

(Part shown)

Table 6.2.1 Material classes and grades

Structural member category		Material class/Minimum grade
ADDITIONAL MINIMUM REQUIREMENTS FOR SHIPS OF LENGTH GREATER THAN 250 m		
E2.	Bilge strake, see Note 1	Grade D/DH within 0,60,4L _R amidships
Note 1. Single strakes required to be of Class III or of Grade E/EH and within 0,4L _R amidships are to have breadths not less than 800 + 5L _R mm, but need not be greater than 1800 mm, unless limited by the geometry of the ship's design.		

© Lloyd's Register Group Limited 2022
Published by Lloyd's Register Group Limited
Registered office (Reg. no. 08126909)
71 Fenchurch Street, London, EC3M 4BS
United Kingdom

Lloyd's Register and variants of it are trading names of Lloyd's Register Group Limited, its subsidiaries and affiliates. For further details please see <http://www.lr.org/entities>

Lloyd's Register Group Limited, its subsidiaries and affiliates and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.